What Is Claimed Is:

Sub a1

1. A method for aligning a micro-gyroscope having closed loop control of drive, output and sense axes, said method comprising the steps of:

detecting misalignment of said micro-gyroscope; and

correcting misalignment to zero by an electrostatic bias adjustment.

2. The method as claimed in claim 1 wherein said step of detecting misalignment further comprises detecting misalignment by way of quadrature signal amplitude obtained by demodulation of a signal of said output axis using a signal in quadrature to rate signal for said drive axis.

Sub C1

3. The method as claimed in claim 1 further comprising the step of nulling an in-phase bias.

4. The method as claimed in claim 3 wherein said step of nulling an in-phase bias further comprises nulling by electronically coupling a torque component of said drive axis with said output axis.

Sub a2

5. A method for tuning a cloverleaf micro-gyroscope having closed loop control of drive, output and sense axes, said method comprising the steps of:

detecting residual mistuning by way of a signal; and

correcting said residual mistuning to zero by way of electrostatic bias adjustment.

Sub C1

6. The method as claimed in claim 5 wherein said step of detecting residual mistuning further comprises detecting by way of a quadrature signal noise level.

7. The method as claimed in claim 5 wherein said step of detecting residual mistuning further comprises detecting by way of a transfer function test signal.

Sub a3

8. A method for independently aligning and tuning a cloverleaf micro-gyroscope having closed loop control of drive, output and sense axes, said method comprising the steps of:

detecting misalignment of said micro-gyroscope by way of a quadrature signal amplitude;

correcting said misalignment to zero by way of an electrostatic bias adjustment;

detecting residual mistuning by way of a signal; and

correcting said residual mistuning by way of an electrostatic bias adjustment.

Sub C1

9. The method as claimed in claim 8 wherein said step of detecting a residual mistuning further comprises detecting a residual mistuning by way of a quadrature signal noise level.

10. The method as claimed in claim 8 wherein said step of detecting a residual mistuning further comprises detecting a residual mistuning by way of a transfer function test signal.

11. The method as claimed in claim 8 further comprising the step of nulling in-phase bias.

Sub C1

12. The method as claimed in claim 11 wherein said step of nulling further comprises electronically coupling a torque component of said drive axis with said output axis.

13. The method as claimed in claim 8 wherein said micro-gyroscope closed loop control further comprises:

using separate sensors and actuators for said step of correcting said misalignment and said step of correcting said residual mistuning.

14. The method as claimed in claim 8 wherein said step of correcting said misalignment further comprises the step of introducing an electrostatic cross-coupling spring, K^e_{xy} for canceling said misalignment.

15. The method as claimed in claim 14 further comprising the step of applying a bias voltage to a drive electrode on said drive axis that is different from a bias voltage to another drive electrode on said drive axis.

16. The method as claimed in claim 8 further comprising the step of introducing a relative gain mismatch, $\delta_T \neq 0$, to each drive electrode on said drive axis.

17. The method as claimed in claim 8 further comprising the step of maximizing a stiffness matrix K.

18. The method as claimed in claim 8 wherein said step of correcting said residual mistuning to zero further comprises adjusting a total stiffness of said micro-gyroscope.